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Nutrition Labeling

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The American consumer is interested in nutrition. As Dr. Ruth Leverton noted at the November 1971 National Nutrition Education Conference, there is a "recent outburst of enthusiasm for the subject of nutrition and food."

Many consumers are concerned with the effect of what they eat upon their health and vigor and are aware that daily food choices are important and are theirs to make. The consumer's decision to obtain and use nutrition information makes it imperative that accurate, useful, meaningful information be made available.

White House Conference recommendation

Consumers, speaking through State and local participants at the 1969 White House Conference on Food, Nutrition and Health, expressed a desire and need for more nutrition information. A major recommendation of the Conference was that nutrition labeling be included with food products. It was further recommended that the Food and Drug Administration (FDA) develop a consumer oriented system for identifying the nutritional qualities of food items.

DEVELOPMENT OF NUTRITION LABELING SYSTEM

Prior to the White House Conference, nutrition labeling had been used to aid people on special or modified diets. Attention had not been given to supplying information for the vast majority of consumers who do not have any particular dietary restrictions. Evaluation of the use of nutrition labeling for consumer education and information on nutrition and good diet was needed.

In early 1970 an *ad hoc* nutrition labeling advisory committee worked closely with the FDA on the development of easy-to-understand labeling systems. The committee, headed by Dr. Jean Mayer, Harvard School of Public Health, was composed of nutrition experts, educators, and representatives of consumer groups, government, and industry. Nutrition labeling was seen as a way to provide nutrition information consumers could use in selecting foods to satisfy their daily nutrition requirements. Members of the Food and Nutrition Board of the National Research Council, National Academy of Sciences, and of the American Dietetic Association and the American Institute of Nutrition evaluated the preliminary drafts for scientific accuracy. New working drafts, based on the comments of these experts, were developed. Six alternate approaches to nutrition labeling were prepared.

Professional nutrition groups, consumer groups, food industry associations, home economists, and dietitians were asked to comment on these six labeling systems. Three of these systems (the ones which received the strongest support and were thought to be technically feasible) were then selected for consumer testing.

Labeling format

The nutrient data in all three proposed systems was presented in terms of a portion, expressed as a household measure, or in units easily identified as a single usual serving. The grams of protein, fat, and carbohydrate present in the portion were to be listed. The nutrition statements on vitamin, mineral, and protein content were based on a "selected" Recommended Dietary Allowance (RDA) and expressed as a portion of the total RDA.

Recommended Dietary Allowance (RDA's)—"selected"

"Selected" RDA's were recommended for use in the nutrition labels because it is not feasible to express portions of RDA on each label in terms of different ages and sexes. The RDA value selected by FDA for use in nutrition labeling is based on the RDA's established by the Food and Nutrition Board of the National Research Council, National Academy of Sciences. For each of the nutrients (except calcium) the selected RDA is the highest for any age or sex grouping, with the exception of pregnant or lactating women. The RDA value selected for nutrient labeling of calcium is an average of the RDA's for all age and sex groupings.

The highest RDA was selected instead of an average

because the risk of promoting nutrient undernutrition of vitamins, minerals, and protein was considered greater than that of promoting overnutrition of those nutrients.

Seven vitamins and minerals were selected for inclusion on the nutrition label: Vitamin A, vitamin C, thiamin, riboflavin, niacin, calcium, and iron. The content of other vitamins and minerals in terms of the selected RDA may be included on the label if the manufacturer desires.

Selected RDA values.—For the purposes of nutrition labeling, the following daily amounts of vitamins and minerals have been selected by FDA as the standard Recommended Daily Allowances (RDA):

* Vitamin A	5,000 International Units
Vitamin D	400 International Units
Vitamin E	30 International Units
* Ascorbic acid (Vitamin C)	60 milligrams
* Thiamin (B_1)	1.5 milligrams
* Riboflavin (B_2)	1.7 milligrams
* Niacin	20 milligrams
Vitamin B_6	2 milligrams
Folacin (Folic acid)	0.4 milligrams
Vitamin B_{12}	6 micrograms
Biotin	0.3 milligrams
Pantothenic acid	10 milligrams
* Calcium	1,000 milligrams
Phosphorus	1,000 milligrams
* Iron	18 milligrams
Iodine	0.15 milligrams
Zinc	15 milligrams
Magnesium	400 milligrams
Copper	2 milligrams

* Mandatory to appear on label; others are optional.

Expression of RDA.—The three proposals for nutrition labeling differed in the format used for presenting the portion of RDA in the serving size. The three systems were:

- The percent of the RDA expressed numerically.
- The percent expressed in adjectives (good, excellent, etc.).
- The percent expressed as units with 10 units equal to 100 percent of the RDA.

TESTING OF PROPOSED LABELING SYSTEMS

The Consumer Research Institute, a private nonprofit research group, was selected to carry out consumer testing of the nutrition labeling systems. The consumer testing was designed to demonstrate if nutrition labeling did have a desirable effect on the food selection and buying habits of the consumer, and if so, which of the three proposed systems was most meaningful and useful.

Effect of nutrition labeling on catalog food purchases

The Consumer Research Institute conducted a study of the effect of nutrition information and nutrition labeling on purchase patterns of canned and purchased food by 950 middle-class households in Georgia and Connecticut. These households were asked to do their food purchasing by catalog. After an introductory time period, nutrition information was introduced into the description of a number of catalog items. Directions for use of the information were also included in the catalog. Results of the study indicated that:

- Purchase patterns changed after the introduction of nutrition labeling.
- Nutritionally labeled products with a real nutritional advantage over competitors gained an increased portion of the market.
- Interest in nutrition, high when the study started, increased as the study proceeded.
- Consumer awareness of nutrition, particularly of vitamins and minerals, increased during the time of the study.
- The three formats selected by FDA for testing were understood and used equally well.
- Listing all nutrients or listing only those present seemed equally acceptable to these consumers.
- Listing of protein, fat, and carbohydrates in percent composition caused changes in consumer buying behavior.

Consumer questionnaires

Questionnaires were sent to three population groups: 2000 consumers selected to represent the American population as a whole (a national sample), 2000 consumers identified as low income, and 600 consumers identified as "under educated" (no high school education). The three nutrition labeling formats under consideration were included in the study. The questionnaires were designed to determine consumers' ability to perceive nutritional differences between two canned or packaged products and the ability to select the more nutritious of the two. The effect of including on the label all selected nutrients as opposed to only those present was also studied.

Results.—Approximately 80 percent of the national sample were able to perceive nutritional differences and to select the more nutritious products with all of the formats. Lower income participants found measurements of nutritional quality presented in a numerical or pictorial format easier to understand than measurements in the adjective format. Low education participants preferred the

numerical percent format; the adjectives were confusing and the pictures were considered too silly or childish.

It was slightly easier for participants in the study to perceive nutrition advantages of one product over another when only those nutrients present in the product were listed. Inclusion of other nutrients noting their zero content was confusing to some individuals.

In-store tests

A number of food chains expressed interest in studying the consumers' reactions to nutrition labeling. The following chains agreed to conduct in-store tests which FDA desired:

- Giant Food, Inc., of Washington, D.C., Maryland, and Virginia.
- Consumers Cooperative of Berkeley, Inc., Berkeley, California.
- First National Stores, Inc., Somerville, Mass.
- The Kroger Company, Cincinnati, Ohio, area.
- Jewel Food Stores, Melrose Park, Illinois.

Each store agreed to test and evaluate consumer response to one of the three FDA nutrition labeling formats. The tests were planned to show consumer understanding of nutrition labeling itself and an understanding of how it relates to the selection of a good daily diet. Some stores, for their own information, included additional information on ingredients on the labels in order to determine consumer interests in this aspect of labeling.

Nutrition education.—In some tests store employees attended one day sessions on the basis of nutrition and the nutrition labeling program. In addition, information on nutrition and buying was distributed weekly to employees of some stores.

Consumer education consisted of bag stuffers, newspaper advertisements, and, in some cases, circular advertising, store signs, and preannounced visits by the food chains' nutritionists. Radio spots, institutional ads, and point-of-sale shelf extender displays were additional means of consumer education.

Results.—Preliminary reports of in-store tests are based primarily on store surveys and consumer interest as expressed via mail and telephone. The majority of those consumers who responded asked that the labeling be continued. Store surveys conducted before and after the labeling tests showed that the nutritional knowledge of the consumers appeared to have increased during the test period and indicated that the ability to understand and use the labels seemed to increase as income and education increased.

Consumers, including those with low incomes and those with less than a high school education, were apparently able to understand and use nutrition labeling. The numerical percentage format was the most acceptable to the low-income consumers, even though all three formats appeared to be understood and used by all.

Additional benefits of labeling.—Of the consumers who responded to the questions, 88 percent felt that nutrition labeling would lead to benefits such as increased manufacturer efforts to produce more nutritious products and increased interest in educating the consumer through advertising. A greater percent (98%) of those who responded felt that it is a consumer's right to have nutrition information about food products on the market.

Conclusions of tests and surveys.—As a result of the studies, FDA concluded that there is strong consumer interest in nutrition labeling. This interest plus the consumer's apparent ability to understand and use the labeling indicates to FDA that the time is right for development and implementation of nutrition labeling.

Nutrition labeling format

A single nutrition labeling guide needs to be established, because the use of many individual guides by different food companies would be confusing to the consumer and reduce the educational potential of the program.

Information to be included on the label.—The Food and Drug Administration proposed in March 1972 that food labels include the following information, in terms of a stated serving or portion, under the heading "Nutrition Information":

- Caloric content to the nearest five-calorie increment.
- Grams of protein, fat, and available carbohydrate.
- Vitamins and minerals expressed in 10-percent increments of the selected RDA. Five-percent increments may be used up to 20 percent. The statement "Contains no significant quantity" may be used if the product contains less than 5 percent of any of the vitamins or minerals which must be listed on the label.
- The vitamin and mineral listing must include vitamin A, vitamin C, thiamin, riboflavin, niacin, calcium, and iron. Mention of other vitamins and minerals is optional.

Vitamin and mineral labeling requirements.—Results of the tests of nutrition labeling indicate that there is a slight reduction in the percent of consumers who can understand and use the labels when all seven vitamins and minerals are included on each label. However, because there are increased educational benefits from listing all seven whether or not they are present in the product, a decision was made to include all of them on each label.

This Format is a Proposal

The format for nutrition labeling which has been discussed in this article is a proposal of the Food and Drug Administration. Consumer and organization comments,

criticisms, and suggestions on the proposal have been requested by the end of June 1972. The responses received by the FDA will be used in developing the final nutrition labeling format.

NEED FOR CONSUMER EDUCATION

Nutrition labeling is a potential tool for improving the diet of the American people. In order for consumers to effectively use this tool to improve their diets, nutrition education is essential.

It is probable that educational materials will be prepared and distributed by involved government agencies and industries when nutrition labeling is introduced. These materials will be of value to many consumers and nutritionists and allied workers in the field. Further interpretation and demonstration of the use of the labeling system will be necessary for most consumers.

Detailed nutrition education programs can best be developed when a specific labeling format has been adopted. Therefore, the objective here is not to outline specific programs for use in acquainting consumers with nutrition labeling but rather to bring to the attention of readers those factors which are likely to require specific instruction, education, and interpretation if nutrition labeling is to be of value to consumers.

If the current proposal is adopted, it will be important for consumers to understand that the RDA values for nutrients vary with age, sex, activity, and other factors. With the exception of calcium, the RDA values selected for use in the labeling are the highest listed for any age or sex group (except pregnant or lactating women). Consumers need to realize that precise adoption of the RDA's on the label for all members of the family is not necessary, because the nutritional needs of most family members are less than those expressed on the label.

The proposed nutrition label notes the content of only some of the total number of nutrients needed for growth and maintenance of the human body. The additional vitamins, minerals, and roughage are consumed when people select and follow a well-balanced and varied diet. Adherance to a food guide such as the Basic 4 Food Groups will ensure that individuals satisfy the nutritional requirements for those nutrients mentioned on the nutrition label as well as requirements for those not mentioned on the label.

Full use of the labeling system would necessitate nutrition labeling on all food items. The consumer could then select a day's diet which would provide 100 percent of the RDA of all the nutrients listed. It is unreasonable to assume that consumers would daily devote the necessary time and effort to such an endeavor. Consumers might, however, want to determine the adequacy of their family's diet by this method several times a year or even once a month.

In the labeling tests only a small number of items were nutritionally labeled. Under these conditions, the consumer cannot use the labeling system to assess or assemble a day's diet. However, those food items which are labeled can be compared with each other on the basis of their content of particular nutrients. The consumer can, for example, select the prepared dinner with the greatest amount of protein. Or a mother whose child doesn't drink milk (and a mother who has received enough nutrition education to realize that milk is usually a child's chief source of calcium) can study the labels on other food items to determine which foods can serve as sources of calcium for her child.

FOR THE SUCCESS OF NUTRITION LABELING

Nutrition labeling will probably soon become part of the American food marketing scene. However, nutrition labeling is only one of the steps necessary in providing information that will help people to choose a good diet. For the potential of the labeling program to be realized, it is essential that consumer nutrition education on the concept, value, and use of the system be made available through government, private and industry programs, schools, and consumer groups. In order to provide education for the consumer on the use of the labeling, it will be necessary to provide guidelines to all nutrition educators (school and community) so they may support the education of the public on the use of the labeling.

Many consumers will be unable to take advantage of the labeling information unless they receive detailed instructions on the value and limitations of the system. They will need to become aware of the concept of "nutrients" and the term "grams." The requirements for nutrients in addition to those listed on the label need to be recognized by the consumer. Translation of the RDA on the label to amounts for each family member must be understood.

Therefore, it is imperative that the grass roots nutritionists and allied personnel become well acquainted with the final nutrition labeling format and that they carry out programs to help consumers use the nutrition information.

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